C. REMARKS

The Examiner is thanked for the performance of a thorough search. By this amendment, Claims 1-16 and 22-47 have been canceled and new Claims 53-57 have been added. Hence, Claims 17-21 and 48-57 are pending in this application. The amendments to the claims and the new claims do not add any new matter to this application. Furthermore, the amendments to the claims were made solely to correct a typographical error and not for any reason related to patentability. All issues raised in the Office Action mailed December 22, 20005 are addressed hereinafter.

OBJECTION TO ABSTRACT

The abstract was objected to because of a grammatical error. The abstract has been amended as indicated herein to correct the grammatical error. In view of the amendment to the abstract made herein, reconsideration and withdrawal of the objection to the abstract is respectfully requested.

REJECTION OF CLAIM 7 UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

Claim 7 was rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The basis for the rejection is that the dependency of Claim 7 is incorrect because it further defines the step of "adjusting a gain" which is not recited in Claim 1. This rejection is now moot in view of the cancellation of Claim 7. Accordingly, reconsideration and withdrawal of the rejection of Claim 7 under 35 U.S.C. § 112, second paragraph, is respectfully requested.

REJECTION OF CLAIMS 1-13 and 15-52 UNDER 35 U.S.C. § 102(e)

Claims 1-13 and 15-52 were rejected under 35 U.S.C. § 102(e) as being anticipated by *Levin et al.*, U.S. Patent No. 6,122,247 (hereinafter "*Levin*"). This rejection is now moot with respect to canceled Claims 1-16 and 22-47. It is respectfully submitted that Claims 17-21 and 48-52 are patentable over *Levin* for at least the reasons provided hereinafter.

CLAIM 17

Claim 17 is directed to a method for adaptively assigning bits to channels of a discrete multi-channel modulation communications system that recites:

> "re-assigning one or more bits from a first channel in a plurality of channels to a second channel in the plurality of channels, and re-assigning a first gain from the first channel to the second channel, if (i) a difference between a performance characteristic of the first channel and of the second channel will be reduced, and (ii) re-assigning the one or more bits from the first channel to the second channel will satisfy a bit constraint of the communications system; else
> making a determination as to whether re-assigning a second gain from the first channel to the second channel will (i) reduce a difference between a performance characteristic of the first channel and of the second channel, and (ii)satisfy a gain constraint of the communications system."

In the approach for adaptively assigning bits to channels of a discrete multi-channel modulation communications system recited in Claim 17, both bits and gain are re-assigned from a first communications channel to a second communications channel if two conditions are satisfied, namely, if a difference in performance characteristic between the first and second channels will be reduced and that the re-assigning of bits from the first channel to the second channel will satisfy a bit constraint of the communications system. If either condition is not satisfied, then a determination is made whether re-assigning a different amount of gain from the first communications channel to the second communications channel will reduce a difference in performance characteristic between the first and second channels and satisfy a gain constraint of the communications system.

It is respectfully submitted that these limitations are not taught or suggested by *Levin*. In the approach for re-allocating bits described in *Levin*, bits are de-allocated from bins having the lowest current margin to bins having the highest projected margin. To the extent that *Levin* describes making changes to gain, it is in the context of making fine gain changes only after bit reallocation has been completed using available message fields in frames. Col. 5, lines 33-35; Col. 7, lines 50-67 and FIG. 3, Step 333. There is no teaching or suggestion in *Levin* of re-assigning both bits and gain under the specific conditions recited in Claim 17, i.e., if both the difference in performance characteristic between the first and second channels will be reduced

and that the re-assigning of bits from the first channel to the second channel will satisfy a bit constraint of the communications system.

In view of the foregoing, it is respectfully submitted that Claim 17 recites one or more limitations that are not taught or suggested by *Levin* and that Claim 17 is therefore patentable over *Levin*.

CLAIMS 18-21

Claims 18-21 all depend from Claim 17 and include all of the limitations of Claim 17. It is therefore respectfully submitted that Claims 18-21 are patentable over *Levin* for at least the reasons set forth herein with respect to Claim 17. Furthermore, it is respectfully submitted that Claims 18-21 recite additional limitations that independently render them patentable over *Levin*.

CLAIMS 48-52

Claims 48-52 recite limitations similar to Claims 17-21, except in the context of computer-readable media. It is therefore respectfully submitted that Claims 48-52 are patentable over *Levin* for at least the reasons set forth herein with respect to Claims 17-21.

In view of the foregoing, it is respectfully submitted that Claims 17-21 and 48-52 are patentable over *Levin*. Accordingly, reconsideration and withdrawal of the rejection of Claims 17-21 and 48-52 under 35 U.S.C. § 102(e) as being anticipated by *Levin* is respectfully requested.

NEW CLAIMS 53-57

New Claims 53-57 recite limitations similar to Claims 17-21, except in the context of apparatuses. It is therefore respectfully submitted that new Claims 53-57 are patentable over *Levin* for at least the reasons set forth herein with respect to Claims 17-21.

CONCLUSION

It is respectfully submitted that all of the pending claims are in condition for allowance and the issuance of a notice of allowance is respectfully requested. If there are any additional charges, please charge them to Deposit Account No. 50-1302.

The Examiner is invited to contact the undersigned by telephone if the Examiner believes that such contact would be helpful in furthering the prosecution of this application.

Respectfully submitted,

HICKMAN PALERMO TRUONG & BECKER LLP

Edward A. Becker
Reg. No. 37,777
Date: February _14_ **, 2006**

2055 Gateway Place, Suite 550
San Jose, CA 95110
Telephone: (408) 414-1080 ext. 204
Facsimile: (408) 414-1076

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